





METHOD FOR PLASMA ETCHING WITH PULSED SUBSTRATE ELECTRODE POWER**Publication number:** EP1153425 (A1)**Publication date:** 2001-11-14**Inventor(s):** LAERMER FRANZ [DE]; SCHILP ANDREA [DE]**Applicant(s):** BOSCH GMBH ROBERT [DE]**Classification:****- international:** H05H1/46; H01J37/32; H01L21/302; H01L21/3065;
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H01J37/32**- European:** H01L21/3065B; H01J37/32H1; H01L21/3065**Application number:** EP20000972618 20001010**Priority number(s):** WO2000DE03545 20001010; DE19991057169 19991127**Also published as:** WO0139261 (A1) DE19957169 (A1) JP2003515925 (T) US6926844 (B1)

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A method for etching structures in an etching substrate (18), in particular in a silicon body (18) by means of a plasma (14) with a lateral extent, which is exactly defined by means of an etching mask, is disclosed. A high frequency pulsed high frequency power is coupled with the etching substrate (18) by means of an, at least temporarily applied, high frequency alternating voltage. Said coupled high frequency pulsed high frequency power is furthermore modulated with a low frequency and, in particular, cycled. Said disclosed method opens a wide process window, for the variation of etching parameters in the plasma etching process as carried out and is particularly suitable for the etching of structures in silicon, with high mask selectivity and high etching rates, with simultaneously minimised charging effects, in particular with regard to pocket formation on dielectric boundary surfaces.

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